The development of metal injection moulding for ZK60 magnesium alloy using palm stearin based binder system

Abstract:

In this paper, the development of green compact of ZK60 magnesium alloy was studied in the context of MIM using screw type injection moulding machine model Battenfeld BA250CDC. The MIM feedstock used was 64 vol.% powder loading and the balance was palm stearin and low linear density polyethylene with the fraction of 60/40 by weight percent. The injection moulding parameters were then adjusted until the optimal condition of green part was accomplished. Results indicate that the feedstock exhibited good workability when injection moulded at the temperature of 190°C, injection pressure of 900kN, flow rate of 15,5cm 3/s and with a very low ejection parameters. This technique provides an additional means to manufacture magnesium alloy components for a wide variety of applications.